

LOCKHEED AIRCRAFT CORPORATION

MISSILE SYSTEMS DIVISION • SUNNYVALE, CALIFORNIA



June 7, 1960

Professor Joshua Lederberg
Stanford University
Stanford, California

Dear Professor Lederberg:

I visited Dr. John Howard at the Geophysics Research Directorate of the Air Force Cambridge Research Center last week and discussed with him the subject of infrared backgrounds. He indicated that much of the work was classified when the measurements were made but that most of it has now been declassified. Of the various projects which have been carried out, he mentioned the following: Professor Nathan Ginsberg of the Physics Department, University of Syracuse, has made measurements out to 5 microns looking down from hills; Howard thinks something has been reported on this in the Journal IRIS. David Murcray at the University of Denver has made measurements out to 5 microns and probably to 15 microns with filters, working on a contract from WADD at Wright Field. Dr. John Strong at Johns Hopkins University has made measurements looking down from balloons in the region 5 to 20 microns. Barnes Engineering Corporation was prepared to make measurements over the Arctic for the Army's Snow, Ice and Permafrost activities; however, this may not have been carried out. There is a report on Planetary Astronomy From Satellite Substitute Vehicles by Strong, de Vaucouleurs and Zwicky; this report was prepared for Holloman Air Force Base, Report AFMDC-TR-60-6. Ohio State University has prepared reports: Natural Environment of the Planet Mars, WADC AF 33(616)-5914, Technical Note 847-1, February 1959; Natural Environment of the Planet Venus, WADC Technical Note 847-2, February, 1959; Survey of the Literature on Radiation in the Atmosphere, US Signal Supply Agency, DA-36-039-SC-78153, September 1958. Richard McDonald at Boeing Aircraft had a good treatment of backgrounds in a Boeing proposal; this has led to a contract for a digest of earth background from an orbiting system; as I understand it, this study is just starting. Dr. W. W. Kellogg at Rand presented a paper at the National IRIS meeting, discussing the situation involved in looking down into the earth's atmosphere in a few bands; this has appeared in the most recent IRIS Journal.

June 7, 1960

You probably have ready access to the IRIS journals at Stanford. A. E. Siegman in the Electrical Engineering Department receives copies of this journal. Also, Sylvan Rubin, in the Physical Sciences Division at SRI receives them.

The above represents the sum total of information that I have been able to find on this subject. Bruno Augenstein has some information on programs about to be started to obtain data which bear on this subject.

Yours very truly,

A handwritten signature in black ink, appearing to read 'F. S. Johnson', with a large, stylized initial 'F'.

F. S. Johnson, Manager
Space Physics, 53-23

FSJ:pi